SLV-E850B/E850UX/E880EG/F900B/F900NP/F900UX/F900VC/F990B/F990NP/F990UX/F990VC

RMT-V222C/V222D/V222E/V223C/V240/V240A/V240B/V240C/V240D

French Model
SLV-E850B/F900B/F990B

UK Model
SLV-E850UX/F900UX/F990UX

Greek Model
SLV-E880EG

Spanish Model
SLV-F900NP/F990NP

Germany Model
SLV-F900VC/F990VC

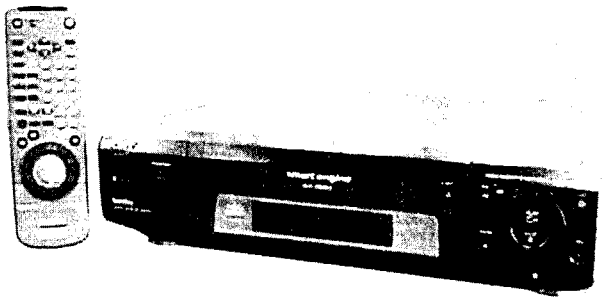

Photo : SLV-F990

Hi-Fi

VHS

- **Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENTS VI for MECHANICAL ADJUSTMENTS. (9-921-647-11)**

SPECIFICATIONS

System

Channel coverage
- PAL (D/K, B/G)
- VHF E2 to E12, R1-R12
- UHF E21 to E69, R21-R69
- CATV S01 to S05, S1 to S41

RF output signal
- UHF channels 21 to 69

Aerial out
- 75-ohm asymmetrical aerial socket

Inputs and outputs

LINE-1 (TV)
- 21-pin
- Video input: pin 20
- Audio input: pins 2 and 6
- Video output: pin 19
- Audio output: pins 1 and 3

LINE-3 IN
- 21-pin
- Video input: pin 20
- Audio input: pins 2 and 6

LINE-2 IN
- VIDEO IN, phono jack (1)
- Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
- AUDIO IN, phono jack (2)
- Input level: 327 mVrms
- Input impedance: more than 47 kilohms

LINE-2 OUT
- VIDEO OUT, phono jack (1)
- Output signal: 1 Vp-p, 75 ohms, unbalanced sync negative
- AUDIO OUT, phono jack (2)
- Rated output level: 327 mVrms
- Load impedance: 47 kilohms
- Output impedance: less than 10 kilohms

General

Power requirements
- 220 – 240 V AC, 50 Hz

Power consumption
- 23 W

Operating temperature
- 5°C to 40°C

Storage temperature
- –20°C to 60°C

Dimensions
- Approx. 430 × 100 × 314 mm (w/h/d) including projecting parts and controls

Mass
- Approx. 4.6 kg

Supplied accessories

Remote commander (1)
R6 (size AA) batteries (2)
Aerial cable (1)
Audio cable (1)
EURO-AV cable (1)

Design and specifications are subject to change without notice.

VIDEO CASSETTE RECORDER

SONY®

FEATURE DIFFERENCE

MODEL NAME	E850UX	E850B	E880EG	F900VC	F900NP	F900B	F900UX	F990VC	F990NP	F990B	F990UX
SAFETY SECAM (REC/PB)		O/O				O/O				O/O	
ME-SECAM (REC/PB)		X/O	O/O			X/O				X/O	
FLAP (W/SW)				O	O	O	O	O	O	O	O
COMMAND SW								O	O	O	O
DNR			O	O	O		O	O	O	X	O
ML KEY				O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)	O(4)
COUNTER RESET			O					O	O	O	O
AUDIO OUT 2	RCA	RCA		RCA	RCA	RCA	RCA				
EUR IN (2nd)	in	C+/in	C+/in	C+/in	C+/in	C+/in	in	C+/in	C+/in	C+/in	in
ADDITIONAL IN (RCA INPUT)								O	O	O	O
LINE 2 OUT			O					O	O	O	O
SAT CONTROL	O	O	Δ					O	Δ	O	O
ACS (Δ : ACA)	O	O	Δ	Δ	O	O	O	Δ	O	O	O
TUNER BTF-	WU601	3WC443	3WC425	3WC402	WC411	3WC443	WU601	3WC402	WC411	3WC443	WU601
SYSTEM 1	I	L	DK	BG	BG	L	I	BG	BG	L	I
STEREO	NI	NI	ZWEI	ZWEI	N/Z	NI	NI	ZWEI	N/Z	NI	NI
SYSTEM 2		BG	BG			BG				BG	
STEREO		ZWEI	ZWEI			ZWEI				ZWEI	
CATV		O	O	O	O	O		O	O	O	
RF OUT SYS	I	L/G	K/G	G	G	L/G	I	G	G	L/G	I
REMOTE COMMANDER	V240	V240A	V223C	V222C	V222C	V222E	V222D	V240B	V240B	V240D	V240C
VTR MODE	3	3	3	3	3	3	3	1.2.3	1.2.3	1.2.3	1.2.3
LANGUAGE	ENG	FRE	ENG	ENG	ENG	FRE	ENG	ENG	ENG	FRE	ENG
SLOW				O	O	O	O				
SHOW VIEW/VIDEO PLUS	V PLUS DX	SVDX	SV	SV	SV	SV	V PLUS	SV DX	SV DX	SV DX	V PLUS DX
AUDIO DUB	O	O	O					O	O	O	O
REPLAY	O	O	O					O	O	O	O
X2	O (RING)	O (RING)	O	O	O	O	O	O (RING)	O (RING)	O (RING)	O (RING)
FRAME	O (RING)	O (RING)	O (JOY)	O	O	O	O	O (RING)	O (RING)	O (RING)	O (RING)
TITLE				O	O	O	O	O	O	O	O
SAT	O	O						O	O	O	O

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replace-ment.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270°C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

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1. ERROR CODE INDICATION 5

1. GENERAL

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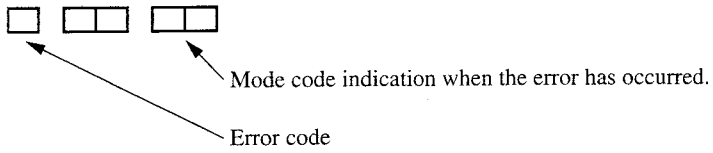
1. ERROR CODE INDICATION

- Error codes are indicated using the lower 5 digits in the fluorescent display tube.
  "At this time, Colon ":" between character is not indicated."



ERROR CODE

0	No error
1	Cam encoder error Loading direction
2	Cam encoder error Unloading direction
3	T reel error
4	S reel error
5	Capstan error
6	Drum error
7	Error on initializing
8	Cassette loading error
9	Reserve

MODE CODE

0	Power-on eject	10	FWD x1	20	REW play
1	Power-on initial	11	FWD x2	21	Cas. loading
2	Power-off eject	12	CUE	22	Tape loading
3	Power-off stop	13	PB-pause	23	Power-off loading
4	FF	14	RVS-pause	24	Mecha. error (Power on)
5	REW	15	RVS x1	25	Power-on eject initial
6	REC	16	RVS x2	26	Power-off eject initial
7	REC- pause	17	REV	27	APC REC
8	Power-on stop	18	Power-off initial	28	Cas. loading (No auto PB check)
9	PB	19	Mecha. error (Power off)		

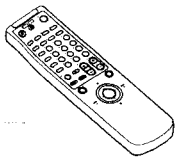
SECTION 1
GENERAL

This section is extracted from SLV-E880EG instruction manual.

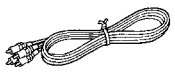
Step 1
Unpacking

Check that you have received the following items with the VCR:

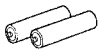
- Remote commander



- Audio cable

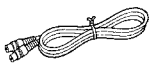


- R6 (size AA) batteries



- EURO-AV cable

- Aerial cable

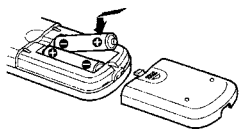


Step 2
Setting up the remote commander

Inserting the batteries

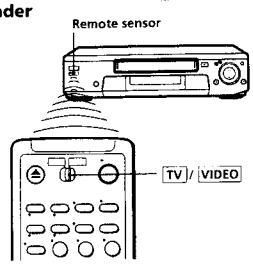
Insert two R6 (size AA) batteries by matching the + and – on the batteries to the diagram inside the battery compartment.

Insert the negative (-) end first, then push in and down until the positive (+) end clicks into position.



Using the remote commander

You can use this remote commander to operate this VCR and a Sony TV. Buttons on the remote commander marked with a dot (•) can be used to operate your Sony TV. If the TV does not have the ■ symbol near the remote sensor, this remote commander will not operate the TV.



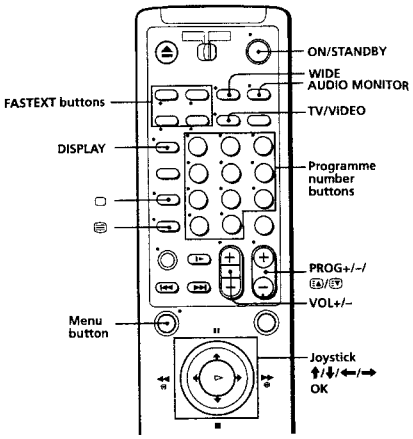
To operate	Set TV / VIDEO to
the VCR	VIDEO and point at the remote sensor on the VCR
a Sony TV	TV and point at the remote sensor on the TV

Using the joystick

Mode	Operation	Action
Normal	Push up/down/left/right ↑/↓/←/→	PAUSE/STOP/FF/REW
	Press	PLAY
Menu	Push up/down/left/right ↑/↓/←/→	Select in menu
	Press	OK

continued

Step 2: Setting up the remote commander (continued)



TV control buttons

To	Press
Turn the TV into standby or active mode	ON/STANDBY
Select an input source of the TV either from aerial in or from line in	TV/VIDEO
Select the programme position of the TV	Programme number buttons PROG +/–
Adjust the volume of the TV	VOL +/–
Switch to TV (Teletext off)	▢ (TV)
Switch to Teletext	▤ (Teletext)

To	Press
Select the sound	AUDIO MONITOR
Use FASTEXT	FASTEXT buttons
Call up on-screen display	DISPLAY
Change the Teletext page	▤/▤
Operate TV menu options	MENU Joystick (↑/↓/←/→, OK)
Switch the wide mode of a Sony wide TV (For other manufacture's wide TV, see "Controlling other TVs with the remote commander" below.)	WIDE

Notes

- In normal use, the batteries should last about three to six months.
- If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery with an old one.
- Do not use different types of batteries together.
- Some buttons may not work with certain Sony TVs.

Controlling other TVs with the remote commander

The remote commander is preprogrammed to control non-Sony TVs. If your TV is listed in the table below, set the appropriate manufacturer's code number.

1 Set TV / VIDEO at the top of the remote commander to TV.
2 Hold down ON/STANDBY, and enter your TV's code number(s) using the programme number buttons. Then release ON/STANDBY.
Now you can use the following TV control buttons to control your TV: ON/STANDBY, TV/VIDEO, programme number buttons, PROG +/–, VOL +/–, ▢ (TV), ▤ (Teletext), FASTEXT buttons, and WIDE with some TV.

Tip

- If you set your TV's code number correctly while the TV is turned on, the TV turns off automatically.

continued

Code numbers of controllable TVs

If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.

To make wide mode settings, see the footnotes below this table for the applicable code numbers.

Manufacturer	Code number	Manufacturer	Code number
Sony	01*1, 02	Philips	06*1, 07*1, 08*1
Akai	68	Saba	12, 13
Ferguson	52	Samsung	22, 23
Grundig	10*1, 11*1	Sanyo	25
Hitachi	24	Sharp	29
Mitsubishi	27*1, 28*1, 50*1, 51*1	TEAC	67
NEC	66	Telefunken	36
Nokia	15, 16, 69*3	Thomson	43*2
Panasonic	17*1, 49	Toshiba	38

*1 Press WIDE to switch the wide picture mode on or off.
*2 Press WIDE, then press VOL +/– to select the wide picture mode you want.
*3 Press WIDE. The menu appears on the TV screen. Then, push joystick to ↑/↓/←/→ to select the wide picture you want and press joystick (OK).

Notes

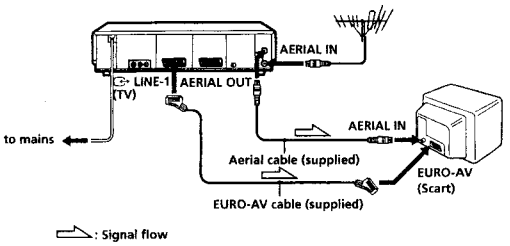
- If the TV uses a different remote control system from the one programmed to work with the VCR, you cannot control your TV with the remote commander.
- If you enter a new code number, the code number previously entered will be erased.
- When you replace the batteries of the remote commander, the code number automatically resets to 01 (Sony). Reset the appropriate code number.

Step 3

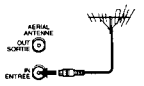
Connecting the VCR

If your TV does not have a EURO-AV connector, see page 12.

If your TV has a EURO-AV (Scart) connector



1 Disconnect the aerial cable from your TV and connect it to AERIAL IN on the rear panel of the VCR.

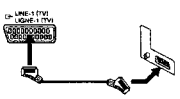


2 Connect AERIAL OUT of the VCR and the aerial input of your TV using the supplied aerial cable.

continued

3 Connect LINE-1 (TV) on the VCR and the EURO-AV (Scart) connector on the TV with the supplied EURO-AV cable.

This connection improves picture and sound quality. If your TV doesn't have a EURO-AV (Scart) connector, see page 12.



4 Connect the mains lead to the mains.

Note

- If the TV is connected to the LINE-1 (TV) connector, setting the RF MODULATOR in the OTHER OPTIONS menu to OFF is recommended (initial setting). In the OFF position, only the signal from the aerial is output through the AERIAL OUT connector (see page 68). You do not have to tune your TV to the VCR. Skip "Tuning your TV to the VCR" on page 14.

About the SMARTLINK features

If the connected TV complies with SMARTLINK, NexTView Link, MEGALOGIC*1 or EASYLINK*2, you can use the SMARTLINK function after you complete the steps on the previous page (the SMARTLINK indicator appears in the VCR's display window when you turn on the TV). You can enjoy the following SMARTLINK features.

- Preset Download
  You can download your TV tuner preset data to this VCR and tune the VCR according to that data in Auto Set Up. This greatly simplifies the Auto Set Up procedure. Be careful not to disconnect the cables nor to exit the function during procedure.
  See "Setting up the VCR with Auto Set Up" on page 16.
- TV Direct Rec
  You can easily record what you are watching on the TV (other than tapes being played on this VCR). For details, see "Recording what you are watching on the TV (TV Direct Rec)" on page 47.
- One Touch Play
  With One Touch Play, you can start playback automatically without turning on the TV. For details, see "Starting playback automatically with one button (One Touch Play)" on page 43.
- One Touch Menu
  You can turn on the VCR and TV, set the TV to the video channel, and display the VCR's on-screen display automatically by pressing MENU on the remote commander.
- One Touch ShowView
  You can turn on the VCR and TV, set the TV to the video channel, and display the ShowView menu automatically by pressing ShowView on the remote commander.
- Automatic Power Off
  You can have the VCR turn off automatically, if the VCR is not used for about 1 minute, after you turn off the TV.
- NexTView Download
  You can easily set the timer recording by using the NexTView Download function of your TV. Please, refer to your TV's instruction manual.

*1 "MEGALOGIC" is a registered trademark of Grundig Corporation.
*2 "EASYLINK" is a trademark of Philips Corporation.

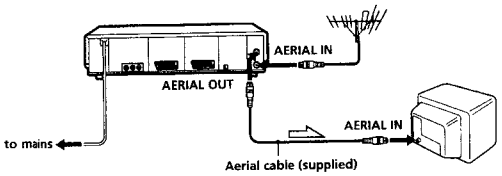
Note

- Not all the TVs respond to the functions above.

continued

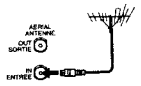
Step 3 : Connecting the VCR (continued)

If your TV doesn't have a EURO-AV (Scart) connector



: Signal flow

1 Disconnect the aerial cable from your TV and connect it to AERIAL IN on the rear panel of the VCR.



2 Connect AERIAL OUT of the VCR and the aerial input of your TV using the supplied aerial cable.

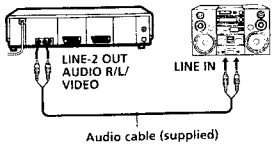
3 Connect the mains lead to the mains.

You now have to tune your TV to your VCR (see page 14).

Additional connection

To a stereo system

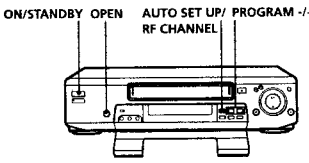
You can improve sound quality by connecting a stereo system to the LINE-2 OUT AUDIO R/L/VIDEO jacks as shown on the right.



Step 4

Tuning your TV to the VCR

If you have connected the VCR to your TV using the EURO-AV cable, skip this step.



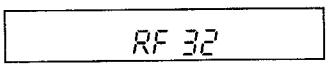
1 ·ON/STANDBY — Press ON/STANDBY to turn on the VCR.

OPEN ····· — Press OPEN to open the drop down panel.

2 AUTO SET UP / RF CHANNEL — Press briefly AUTO SET UP/RF CHANNEL on the VCR.

The factory-preset RF channel appears in the display window.

The VCR signal is output through this channel to the TV.

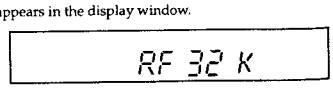


3 Turn on your TV and select a programme position for the VCR picture.

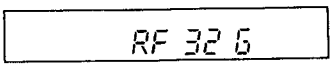
This channel will now be referred to as the video channel.

4 AUTO SET UP / RF CHANNEL — Press AUTO SET UP/RF CHANNEL

The TV system appears in the display window.



5 - PROGRAM + — Press PROGRAM -/+ (repeatedly) to select the correct TV system. If you watch the system B/G , select "G". If you watch the system D/K, select "K".



6 Tune the TV to the same channel as the one shown in the display window so that the picture on the right appears clearly on the TV screen.

Refer to your TV manual for tuning instructions.

If the picture does not appear clearly, see "To obtain a clear picture from the VCR" below.

7 AUTO SET UP / RF CHANNEL — Press AUTO SET UP/RF CHANNEL.

You have now tuned your TV to the VCR. From now on, whenever you want to play a tape, set the TV to the video channel.

To check if the TV tuning is correct

Set the TV to the video channel and press PROGRAM -/+ on the VCR. If the TV screen changes to a different programme each time you press PROGRAM -/+, the TV tuning is correct.

To obtain a clear picture from the VCR

If the picture does not appear clearly in step 6 above, go to step 7 to finish this procedure once. Then start from step 2. After pressing AUTO SET UP/ RF CHANNEL in step 2 to display the RF channel, press PROGRAM -/+ so that another RF channel appears. Then tune the TV to the new RF channel until a clear picture appears.

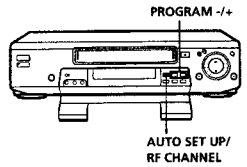
Notes

- When you connect the VCR and your TV only with an aerial cable, you have to set RF MODULATOR in the OTHER OPTIONS menu to ON (see page 68).
- If you set the wrong TV system, you may have no sound or may be distorted.

Step 5

Setting up the VCR with the Auto Set Up function

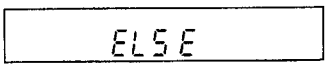
Before using the VCR for the first time, set up the VCR using the Auto Set Up function. With this function, you can set the language for the on-screen display, TV channels, and the VCR clock.



1 AUTO SET UP / RF CHANNEL

Press AUTO SET UP/RF CHANNEL on the VCR for more than 3 seconds.

The VCR automatically turns on, and the country abbreviation appears in the display window.



2 PROGRAM -/+

Press PROGRAM -/+ to highlight the abbreviation of your country.
For some countries, there is a selection of languages to choose from.

The abbreviations of the countries are as follows:

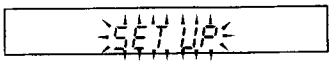
Abbreviation	Country	Language
CZ	Czech	Czech
GR	Greece	Greek
HUN	Hungary	Hungarian
PL	Poland	Polish
RUS	Russia	Russian
ELSE	Other countries	English

If your country does not appear, select ELSE.

3 AUTO SET UP / RF CHANNEL

Press AUTO SET UP/RF CHANNEL.

The auto preset function starts searching for all of the receivable channels and presets them in numerical order.



When no more receivable channels can be found, presetting stops and SET UP disappears from the display window.

To cancel the Auto Set Up function

Press AUTO SET UP/RF CHANNEL.

Notes

- If you use the SMARTLINK connection, the SMARTLINK indicator flashes in the display window during Preset Download operation. Do not exit Auto Set Up during the step 3. If you do, repeat Auto Set Up from the beginning.
- Whenever you operate the Auto Set Up function, some of the settings (ShowView, timer etc..) will be reset. In this case, you have to set them again.

Step 6

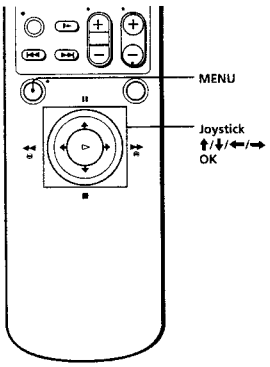
Setting the clock

You must set the time and date on the VCR to be able to use the timer recording features properly.

The Auto Clock Set function works only if a station in your area is broadcasting a time signal. If the Auto Set up function did not set the clock correctly for your local area, try another station for the Auto Clock Set function.

Before you start...

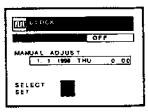
- turn on the VCR and the TV
- set the TV to the video channel..



Setting the clock manually

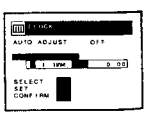
1 MENU / PLAY OK

Press MENU, then push the joystick to ↑/↓ to highlight SETTINGS and press the joystick (OK). Push the joystick to ↑/↓ to highlight CLOCK and press the joystick (OK).



2 PLAY OK

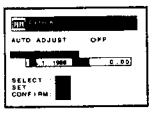
Push the joystick to ↑/↓ to highlight MANUAL ADJUST then press the joystick (OK).



3 PLAY OK

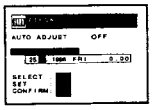
Push the joystick to ↑/↓ to set the date.

The day of the week is set automatically.



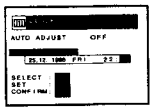
4 PLAY OK

Push the joystick to ➡ to highlight the month and set the month using the joystick ↑/↓.



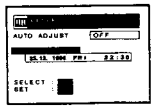
5 PLAY OK

Set the year, hour, and minutes in sequence, using the joystick ➡ to highlight the item to be set, and the joystick ↑/↓ to select the digits.



6 PLAY OK

Press the joystick (OK) to confirm the setting and start the clock.



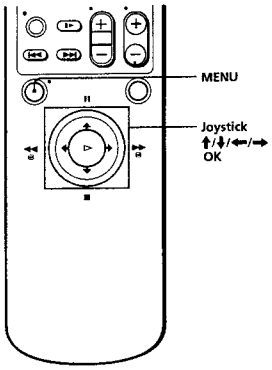
7 MENU

Press MENU to exit the menu.

continued

Step 6 : Setting the clock (continued)

Changing the station for Auto Clock Set

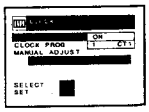


1 Press MENU, then push the joystick to ↑/↓ to highlight SETTINGS and press the joystick (OK). Push the joystick to ↑/↓ to highlight CLOCK and press the joystick (OK).

When using the Auto Set Up procedure, skip this step.

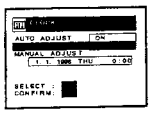
2 Press OK to enter pop up menu and push the joystick to ↑/↓ to set AUTO ADJUST to ON.

Press the joystick (OK).



3 Push the joystick to ↓ to highlight CLOCK PROG, then press the joystick (OK). Push the joystick to ↑/↓ repeatedly until the programme position of the station that carries the time signal appears.

If the VCR does not receive the time signal from any station, AUTO ADJUST returns to OFF automatically.



4 Press MENU to exit the menu.

Tips

- To change the digits during setting, push the joystick to ← to return to the item to be changed, and select the digits using the joystick ↑/↓.
- If you set AUTO ADJUST to ON, the Auto Clock Set is activated whenever the VCR is turned off. The date and time is adjusted automatically by making reference to the time signal from the station whose programme position is displayed in the "CLOCK PROG" row.

  If you do not need the Auto Clock Set, set AUTO ADJUST to OFF.

Note

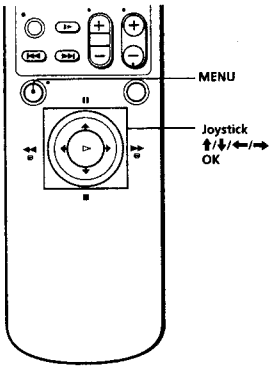
- The menu disappears automatically if you don't proceed for more than a few minutes.

Manual setup — Selecting a language

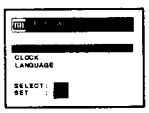
You can change the on-screen display language from the one you selected with the Auto Set Up function.

Before you start...

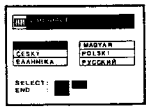
- turn on the VCR and the TV
- set the TV to the video channel.



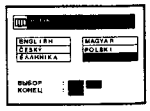
1 Press MENU, then push the joystick to ↑/↓ to highlight SETTINGS and press the joystick (OK).



2 Push the joystick to ↑/↓ to highlight LANGUAGE, then press the joystick (OK).



3 Push the joystick to ↑/↓/←/→ to highlight the desired language, then press the joystick (OK).



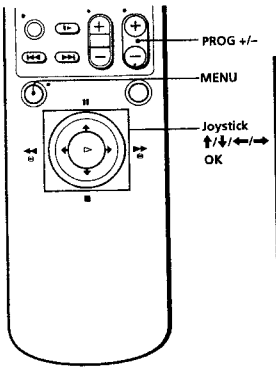
4 Press MENU to exit the menu.

Manual setup — Presetting channels

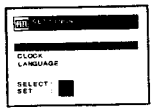
If some channels could not be preset using the Auto Set Up function, you can preset them manually.

Before you start...

- turn on the VCR and the TV
- set the TV to the video channel.

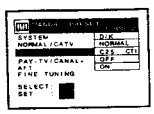


1 Press MENU, then push the joystick to ↑/↓ to highlight SETTINGS and press the joystick (OK).



2 Push the joystick to ↑/↓ to highlight TUNER and press the joystick (OK).

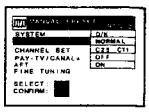
3 Push the joystick to ↑/↓ to highlight MANUAL PRESET and press the joystick (OK).



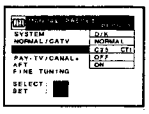
continued

4 Push the joystick to ↑/↓ to highlight NORMAL/CATV. Press the joystick (OK). Push the joystick to ↑/↓ to select NORMAL then press the joystick (OK).

To preset CATV channels, select CATV.

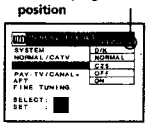


5 Push the joystick to ↑/↓ to highlight CHANNEL SET.



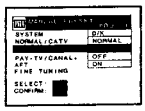
6 • PROG Press PROG +/– to select the programme position.

Selected programme position



7 Press the joystick (OK) to highlight the channel number row , then push the joystick to ↑/↓ to start tuning.

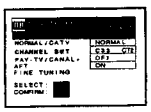
The VCR starts searching for a channel and displays the first one it finds on the TV screen. Push the joystick to ↑/↓ repeatedly until the channel you want is displayed. The channels are scanned in the following order.



B/G TV system		D/K TV system	
Channel number in the CHANNEL SET field	Channel	Channel number in the CHANNEL SET field	Channel
2	E2	2	R1
3	E3	5	R6
4	E4	6	R7
5	E5	12	R12
6	E6	13	R2
7	E7	14	R3
8	E8	15	R4
9	E9	16	R5
10	E10	17	R8
11	E11	18	R9
12	E12	19	R10
21–69	E21–E69	20	R11
CATV 1–41	S1–S41	21–69	R21–R69
CATV 42–46	S01–S05		

If you know the number of the channel you want, press the programme number buttons. For example, for channel 05, first press "0" and then press "5".

8 If the TV sound is distorted or noisy, push the joystick to ↑/↓ /←/→ to highlight SYSTEM, then select B/G or D/K so that you get the better sound



9 Press the joystick (OK).

continued

10 To allocate another channel to another programme position, repeat steps 4 to 8.

11 • MENU Press MENU to exit the menu.

Disabling unwanted programme positions

After tuning the TV channels, you can disable unused programme positions. The disabled positions will be skipped later when you press the PROG +/– buttons. You can also disable unwanted programme positions using the CHANNEL LIST menu (page 31).

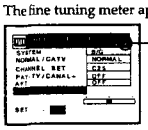
1. In step 7 above, press programme number button "0" twice to display the number "00" beside CHANNEL SET.
2. Press the joystick (OK) to confirm the setting, then press MENU to exit the menu.

If the picture is not clear

Normally, the Auto Fine Tuning (AFT) function automatically tunes in channels clearly. If, however, the picture is not clear, you may also use the manual tuning function.

1. Press PROG +/– to select the programme number for which you cannot obtain a clear picture.
2. Press MENU, then select SETTINGS and press the joystick (OK).
3. Select TUNER and press the joystick (OK).
4. Select MANUAL PRESET and press the joystick (OK).
5. Select FINE TUNING.

The fine tuning meter appears.



Selected programme position

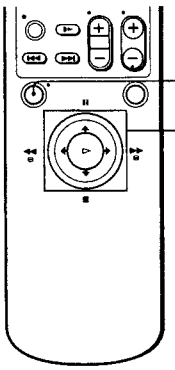
6. Push the joystick to ←/→ to get a clearer picture. Press MENU to exit the menu.

Note that the AFT (Auto Fine Tuning) setting switches to OFF.

Note

- The menu disappears automatically if you don't proceed for more than a few minutes.

Manual setup — Setting station names



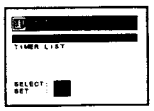
You can also set station names as you like. The set station names are displayed on the TV screen when you change the programme position on the VCR.

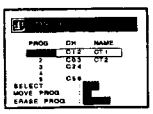
Before you start...

- turn on the VCR and the TV
- set the TV to the video channel.

1 • MENU Press MENU, then push the joystick to ↑/↓ to highlight LISTS then press the joystick (OK). Push the joystick to ↑/↓ to highlight CHANNEL LIST and press the joystick (OK).

The preset channels are displayed on the screen. The station names also appear if the VCR detected them in Auto Set Up.



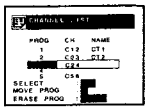


continued

Manual setup — Setting station names (continued)

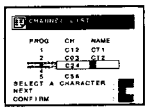
2 Push the joystick to ↑/↓ to highlight the row on which you want to set the station name.

To display other pages for programme positions 6 to 60, push the joystick to ↑/↓ repeatedly.



3

- If you want to set the station name, push the joystick to ➡ twice to highlight the station name column only.
- If you don't want to set the station name, go to step 6.

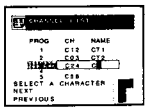


4 Push the joystick to ↑/↓ to select a character.

To set the next character, push the joystick to ➡ to highlight the next space.

If you make a mistake, push the joystick to ⬅ to highlight the character you want to correct, then reset it.

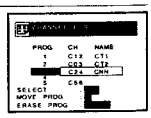
You can set up to five characters for the station name.



5 To set the station name of another station, repeat steps 2 to 4.

If you want to change the programme positions of the stations, proceed to step 2 of "Manual setup — Changing/disabling programme positions" on page 29.

6 Press the joystick (OK) to confirm the setting.



7 Press MENU to exit the menu.

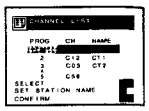
Note

- The menu disappears automatically if you don't proceed for more than a few minutes.

Manual setup — Changing/disabling programme positions (continued)

3 Push the joystick to ↑/↓ until the selected channel row moves to the desired programme position.

The selected channel is inserted at the new programme position and the intermediate channels are displaced to fill the gap.

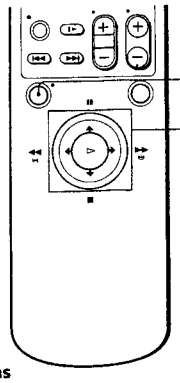


4 Press the joystick (OK) to confirm the setting.

5 To change the programme position of another station, repeat steps 2 to 4.

6 Press MENU to exit the menu.

Manual setup — Changing/ disabling programme positions



After setting the channels, you can change the programme positions as you like. If any programme positions are unused or contain unwanted channels, you can disable them.

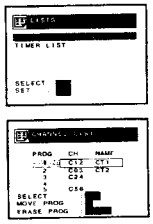
Before you start...

- turn on the VCR and the TV
- set the TV to the video channel.

Changing programme positions

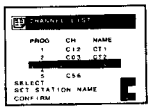
e.g. Moving the programme position from 3 to 1.

1 Press MENU, then push the joystick to ↑/↓ to highlight LISTS and press the joystick (OK). Push the joystick to ↑/↓ to highlight CHANNEL LIST and press the joystick (OK).



2 Push the joystick to ↑/↓ to highlight the row on which you want to change the programme position, then push the joystick to ➡.

To display other pages for programme positions 6 to 60, push the joystick to ↑/↓ repeatedly.

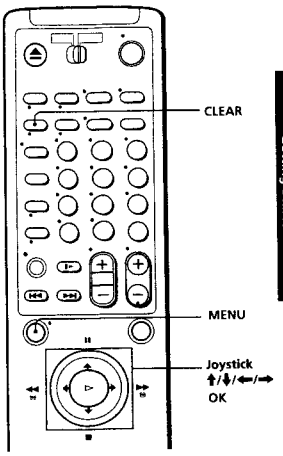


continued

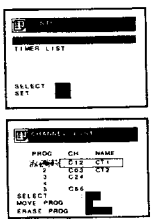
Disabling unwanted programme positions

Note

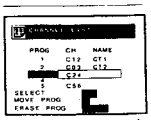
- Be sure to select the programme position you want to disable correctly. If you disable a programme position by mistake, you need to reset that channel manually.



1 Press MENU, then push the joystick to ↑/↓ to highlight LISTS and press joystick (OK). Push the joystick to ↑/↓ to highlight CHANNEL LIST and press the joystick (OK).



2 Push the joystick to ↑/↓ to highlight the row which you want to disable.



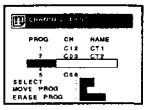
continued

Manual setup — Changing/disabling programme positions (continued)

3 CLEAR

Press CLEAR.

The selected row will be cleared as shown on the right.

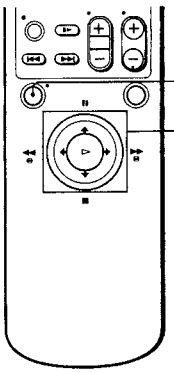


4 Repeat steps 2 and 3 for any other programme positions you want to disable.

5 MENU

Press MENU to exit the menu.

Manual setup — Listing the channels as the TV



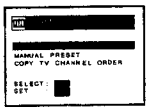
You can match the channels for the programme positions preset in the VCR with the ones preset in the connected TV if you have connected the VCR to your TV using the EURO-AV cable.

Before you start...

- turn on the VCR and the TV

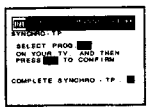
1 MENU, PLAY/OK

Press MENU, then push the joystick to ↑/↓ to highlight SETTINGS and press the joystick (OK). Push the joystick to ↑/↓ to highlight TUNER and press the joystick (OK).



2 PLAY/OK

Push the joystick to ↑/↓ to highlight COPY TV CHANNEL ORDER then press OK.



If you use SMARTLINK connection, you don't need to do the following steps. Listing the channels as the TV will be automatically finished when the normal picture appears.

If you don't use SMARTLINK connection, go to step 3.

3 Select the same programme position on your TV as the one shown on the screen.

continued

Manual setup — Listing the channels as the TV (continued)

4 PLAY/OK

Press OK. SYNCHRO-TP (Synchro Tuner Preset) automatically starts searching for the same channel and presets it in the selected programme position.

5 To match other programme positions, repeat steps 3 to 4.

6 PLAY/OK

Push the joystick to → to complete SYNCHRO-TP

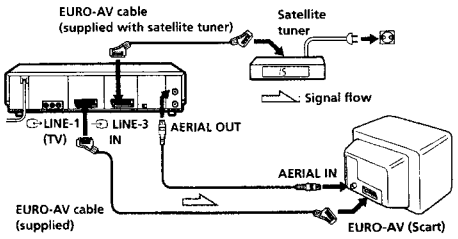
Notes

- Depending on the TV, some VCR channels may not match the channels preset in the TV. In this case, set the channels manually (see page 23).
- If you can't list the channels as the TV, try the Auto Set Up function (see page 16) first. Then follow the steps above.
- Whenever you operate the Auto Set Up function, some of the settings (ShowView, timer etc.) will be reset. In this case, you have to set them again.
- If your TV as two or more EURO-AV (Scart) connectors, connect the VCR to the EURO-AV 1 (Scart 1) connector to use the Synchro TP function.

Manual setup — Using the satellite tuner

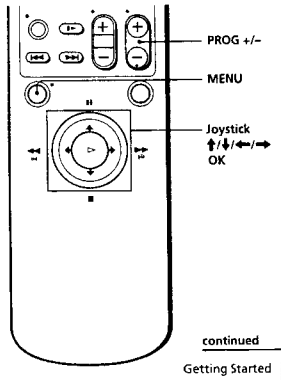
Connecting the satellite tuner

You can connect a satellite tuner into LINE-3 IN connector .



Setting the satellite tuner

To watch or record from the satellite tuner, set your VCR to receive the channels using the on-screen display.



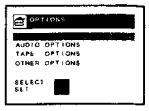
Before you start...

- turn on the VCR and the TV
- set the TV to the video channel.

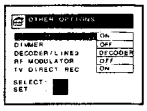
continued

Manual setup — Using the Satellite tuner (continued)

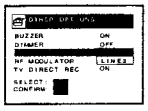
1 Press MENU, then push the joystick to ↑/↓ to highlight OPTIONS and press the joystick (OK).



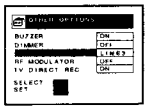
2 Push the joystick to ↑/↓ to highlight OTHER OPTIONS and press the joystick (OK).



3 Push the joystick to ↑/↓ to highlight DECODER/LINE 3 and press the joystick (OK) to enter the pop up menu.



4 Push the joystick to ↑/↓ then select LINE3. Press the joystick (OK).

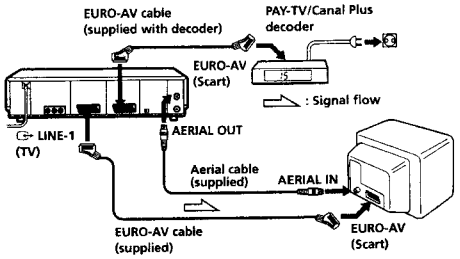


5 Press MENU to exit the menu.

Setting the PAY-TV/Canal Plus decoder

You can watch or record PAY-TV/Canal Plus programmes if you connect a decoder (not supplied) to the VCR.

Connecting a decoder

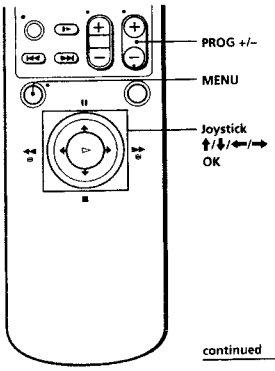


Setting PAY-TV/Canal Plus channels

To watch or record PAY-TV/Canal Plus programmes, set your VCR to receive the channels using the on-screen display.

Before you start...

- turn on the VCR and the TV
- set the TV to the video channel.

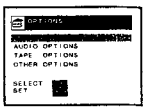


continued

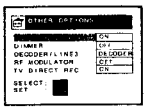
Setting the PAY-TV/Canal Plus decoder (continued)

1 Turn on your decoder.

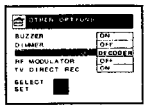
2 Press MENU, then push the joystick to ↑/↓ to highlight OPTIONS and press the joystick (OK).



3 Push the joystick to ↑/↓ to highlight OTHER OPTIONS and press the joystick (OK).

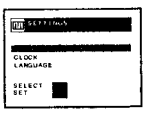


4 Push the joystick to ↑/↓ to highlight DECODER/LINE 3. Press the joystick (OK) to enter the pop up menu, push the joystick to ↑/↓ then select DECODER. Press the joystick (OK).

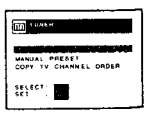


5 Press MENU to exit the menu.

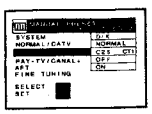
6 Press MENU, then push the joystick to ↑/↓ to highlight SETTINGS and press the joystick (OK).



7 Push the joystick to ↑/↓ to highlight TUNER and press the joystick (OK).

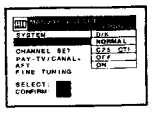


8 Push the joystick to ↑/↓ to highlight MANUAL PRESET and press the joystick (OK).



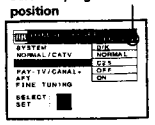
9 Push the joystick to ↑/↓ to highlight NORMAL/CATV. Press the joystick (OK). Push the joystick to ↑/↓ to select NORMAL then press the joystick (OK).

To preset CATV channels, select CATV.

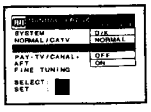


10 Press PROG +/– to select the desired programme position.

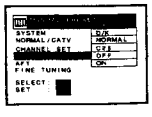
Selected programme position



11 Press the joystick (OK) to enter the channel set box, then push the joystick to ↑/↓ to tune PAY-TV/Canal Plus channels.
When the desired channel is tuned, press the joystick (OK).



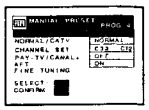
12 Push the joystick to ↑/↓ to highlight PAY-TV/CANAL+and press the joystick (OK) to enter the pop up menu, then push the joystick to ↑/↓ to select ON. Press the joystick (OK).



continued

Setting the PAY-TV/Canal Plus decoder (continued)

13 If the TV sound is distorted or noisy, push the joystick to ↑/↓/←/→ to highlight SYSTEM, then select B/G or D/K so that you get the better sound

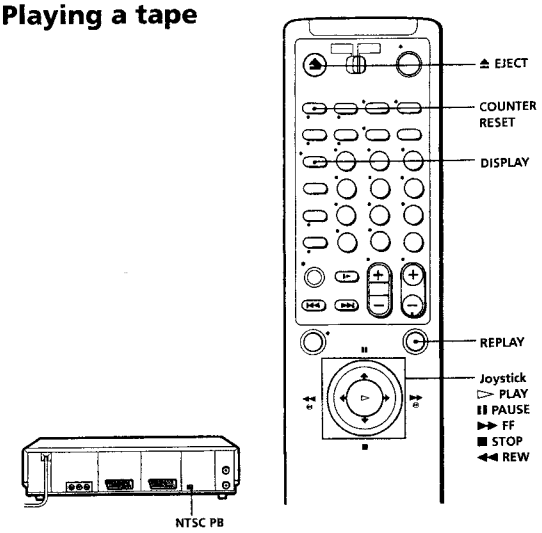


14 MENU Press MENU to exit the menu.

Notes

- The menu disappears automatically if you don't proceed more than a few minutes.
- To superimpose subtitles while watching PAY-TV/Canal Plus programmes, make both decoder-VCR and VCR-TV connections using 21-pin EURO-AV cables that are compatible with the RGB signals. You cannot record subtitles on the VCR.
- When you watch PAY-TV/Canal Plus programmes using the aerial input of the TV, press TV/VIDEO so that the VIDEO indicator appears in the display window.

Playing a tape



1 Turn on your TV and set it to the video channel.

2 Insert a tape.

The VCR turns on and starts playing automatically if you insert a tape with its safety tab removed.

3 Press the joystick (▷ PLAY).

When the tape reaches the end, it will rewind automatically.

continued

Playing a tape (continued)

Additional tasks

To	Push Joystick to
Stop play	■ STOP
Pause play	❚❚ PAUSE
Resume play after pause	❚❚ PAUSE or press the joystick (▷ PLAY)
Search forward	▶▶ FF during playback
Search backward	◀◀ REW during playback
Fast-forward the tape	▶▶ FF during stop
Rewind the tape	◀◀ REW during stop
Eject the tape	Press ⏏ EJECT

To replay a recently watched scene

You can immediately rewind and playback the scene you want to watch again.

During playback, press REPLAY up to four times. The VCR rewinds the tape 10 seconds for each press of the button, and restarts playback.

To set the colour system

If the playback picture has no colour or streaks appear during playback, set the COLOUR SYSTEM option in the VIDEO OPTIONS menu to conform to the system that the tape was recorded in (see page 66). (Normally set the option to AUTO)

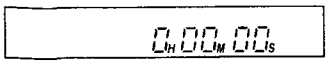
To play an NTSC-recorded tape

Set NTSC PB at the rear of the VCR according to the colour system of your TV.

When your TV is	Set NTSC PB to
PAL only	ON PAL TV
PAL and NTSC	NTSC 4.43

To use the time counter

At the point of the tape that you want to find later, press COUNTER RESET. The counter in the display window resets to "0H00M00S." Search for the point afterwards by referring to the counter.



To display the counter on the TV screen, press DISPLAY.

Notes

- Depending on your TV, the following may occur while playing an NTSC-recorded tape:
  - The picture becomes black and white.
  - The picture shakes.
  - No picture appears on the TV screen.
  - Black streaks appear horizontally on the TV screen.
  - The colour density increases or decreases.
- If you play back a tape in LP or EP mode with NTSC system, the sound is heard in monaural.
- The counter resets to "0H00M00S" whenever a tape is reinserted.
- The counter stops counting when it comes to a portion with no recording.
- While setting the menu on the TV screen, you cannot use the joystick for tape operation.

Starting playback automatically with one button (One Touch Play)

If you use the SMARTLINK connection, you can turn on the VCR and the TV, set the TV to the video channel, and start playback automatically with one button.

1 Insert a tape.

The VCR automatically turns on.

If you insert a tape with its safety tab removed, the TV turns on and switches to the video channel. Playback starts automatically.

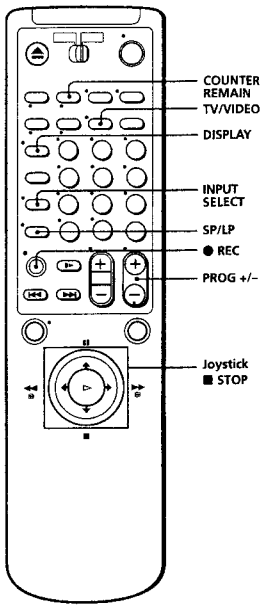
2 Press the joystick (▷ PLAY).

The TV turns on and switches to the video channel automatically. Playback starts.

Tip

- When there already is a tape in the VCR, the VCR and the TV turn on, the TV is set to the video channel, and playback starts automatically in one sequence when you press the joystick (▷ PLAY).

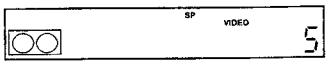
Recording TV programmes



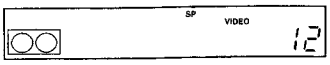
1 Turn on your TV and set it to the video channel.

2 Insert a tape with its safety tab in place.

3 INPUT SELECT Press INPUT SELECT until a programme position number appears in the display window.

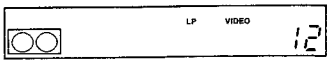


4 • PROG Press PROG +/– to select the programme position you want to record.

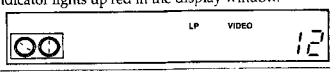


5 • SP/LP Press SP/LP to select the tape speed, SP or LP.

LP (Long Play) provides recording time twice as long as SP (Standard Play), however, SP produces better picture and audio quality.



6 ●REC Press ● REC to start recording.
The recording indicator lights up red in the display window.



To stop recording

Push joystick ↓ (■ STOP).

To check the remaining tape length

Press DISPLAY. The white bar indicates the approximate length of tape remaining. With the display on, press COUNTER/REMAIN to check the remaining time. Each time you press COUNTER/REMAIN, the time counter and the remaining time appear alternately. The remaining time with the ✆ indicator also appears in the display window.

continued

In order to get an accurate remaining time indication, be sure the TAPE SELECT item in TAPE OPTIONS menu is set according to the tape type you use (see page 67).

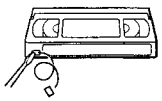
To watch another TV programme while recording

1 Press TV/VIDEO on the remote commander to turn off the VIDEO indicator in the display window.

2 Select another programme position on the TV.

To save a recording

To prevent accidental erasure, break off the safety tab as illustrated. To record on a tape again, cover the tab hole with adhesive tape.



Safety tab

Tips

- To select a programme position, you can use the programme number buttons on the remote commander. For two-digit numbers, press the –/-- (ten's digit) button followed by the programme number buttons.
- You can select a video source from the LINE-1 (TV) or LINE-3 IN (Scart) connector, or the LINE-2 IN jacks using INPUT SELECT.
- The display appears on the TV screen indicating information about the tape, but the information won't be recorded on the tape.
- If you don't want to watch TV while recording, you can turn off the TV.

Notes

- The display does not appear during still (pause) mode or slow-motion playback.
- The display will not appear while playing an NTSC-recorded tape.
- If a tape has portions recorded in both PAL and NTSC systems, the time counter reading will not be correct. This discrepancy is due to the difference between the counting cycles of the two video systems.
- You cannot watch PAY-TV/Canal Plus programme while recording another PAY-TV/Canal Plus programme.
- When you insert a tape with a short tape length such as E-30 or a non-standard commercially available tape, the remaining tape counter may not be correct.
- The remaining tape counter doesn't work for an NTSC-recorded tape. "–:– –" appears in the display window.
- The remaining tape counter is intended for rough measurement only.
- The remaining time will be displayed only about 30 seconds after the tape is inserted and operated for a few moments.

Recording what you are watching on the TV (TV DIRECT REC)

If you use the SMARTLINK connection, you can easily record what you are watching on the TV (other than tapes being played on this VCR).

1 Insert a tape with its safety tab in place.

2 Press ● REC while you are watching a TV programme or external source.

The VCR automatically turns on and starts recording what you are watching on the TV.

Tips

- The TV indicator appears in the display window after you press ● REC in some situations such as:
  - when you are watching a source connected to the TV's line input, or
  - when the TV tuner preset data for the programme position is different from the data in the VCR tuner preset.
- If there is a tape with its safety tab in place in the VCR, the VCR automatically turns on and starts recording what you are watching on the TV when you press ● REC.
- You can turn the TV DIRECT REC function on and off in the OTHER OPTIONS menu of the OPTIONS menu (see page 68).

Notes

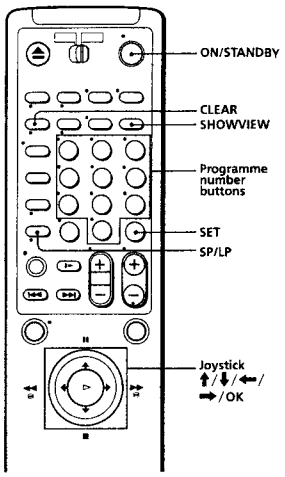
- You cannot record what you are watching using this method when the VCR is in the following modes: pause, timer standby, tuner preset, Auto Set Up, and recording.
- When the TV indicator is lit in the display window, do not turn off the TV nor change the TV programme position. When the TV indicator is not lit, the VCR continues recording the programme even if you change the TV programme position on the TV.

Recording TV programmes using ShowView

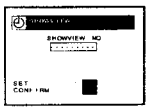
Just enter the programme's ShowView number listed in the TV programme guide. The date, times, and programme position of that programme are set automatically. You can preset up to eight programmes at a time.

Before you start...

- Check that the VCR clock is set to the correct time and date (see page 19).
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- If you don't use the SMARTLINK connection, turn on your TV and set it to the video channel.
- If you use the SMARTLINK connection, go to step 1.



1 SHOWVIEW Press SHOWVIEW.



2 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⓪ Press the programme number buttons to enter the programme's ShowView code.

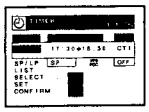
If you make a mistake press CLEAR and re-enter the correct number.

CLEAR

3 SET Press SET.

The date, start and stop times, programme position, and tape speed appear on the TV screen.

If "- -" appears in the programme column (this may happen for local broadcasts), you have to set the appropriate programme position manually. Push joystick ↑/↓ to select the desired programme position. You will only have to do this operation once for the referred channel. The VCR will then store your setting. If you want to record a satellite broadcast, select the LINE on which your satellite tuner is connected (see page 35).



If you want to change the date, time, tape speed, and the VPS/PDC function setting:

1 Push joystick ←/→ to highlight the item you want to change.

2 Push joystick ↑/↓ to reset it.

- to record the same programme every day or the same day every week, see "Daily/weekly recording" on page 50.
- to use the VPS/PDC function, set VPS/PDC to ON. For details of the VPS/PDC function, see "Timer recording with VPS/PDC signals" on page 50.

4 Press joystick (OK) to confirm the setting.

5 • ON/STANDBY Press ON/STANDBY to turn off the VCR.

The ⏻ indicator appears in the display window and the VCR stands by for recording.

To stop recording

To stop the VCR while recording, push joystick ↓ (■ STOP).

continued

Recording TV programmes using ShowView (continued)

Daily/weekly recording

In step 2 above, push the joystick to ↓ to select the recording pattern. Each time you push the joystick to ↓, the indication changes as shown below. Push the joystick to ↑ to change the indication in reverse order.

TODAY → SUN-SAT (Sunday to Saturday) → MON-SAT (Monday to Saturday) → MON-FRI (Monday to Friday) → SAT (every Saturday) ..... → MON (every Monday) → SUN (every Sunday) → 1 month later →(dates count down) → TOMORROW →TODAY

Timer recording with VPS/PDC signals

Some broadcast systems transmit VPS (Video Programme System)/PDC (Programme Delivery Control) signals with their TV programmes. These signals ensure that your timer recordings are made regardless of broadcast delay, early starts or broadcast interruptions.

In step 3 above, push the joystick to ↑/↓ to turn on/off the VPS/PDC indication after you set the recording date. If you do not want to set the VPS/PDC function, turn off the VPS/PDC indication.

You can also use the VPS/PDC function for a source connected to the LINE-1 (TV) and LINE-3 IN connectors, and LINE-2 IN jacks.

Tips

- For two digit numbers, press the -/-- (ten digit) button followed by the programme number button.
- To set the programme position, you can also use the PROG +/– or programme number buttons.
- To set the tape speed, you can also use SP/LP.
- To set the start and stop times, you can also use programme number buttons.

Notes

- When setting the timer with VPS/PDC signals, enter the start and stop times exactly as indicated in the TV programme guide, otherwise the VPS/PDC function won't work.
- If the VPS/PDC signal is too weak or the broadcasting station failed to transmit VPS/PDC signals, the VCR will start recording at the set time without using the VPS/PDC function.
- The ⏻ indicator flashes in the display window when you press ON/STANDBY with no tape inserted.

To use the VCR after setting the timer

To use the VCR before a timer recording begins, just press ON/STANDBY. The ⏻ indicator turns off and the VCR switches on. Remember to press ON/STANDBY to reset the VCR after using the VCR.

You can also do the following tasks while the VCR is recording:

- Reset the counter.
- Display tape information on the TV screen.
- Check the timer settings.
- Watch another TV programme.

Tips

- To cancel the "Recording TV programmes using ShowView" procedure, press SHOWVIEW before pressing SET.
- In step 4 above, you can check the TIMER LIST by selecting LIST and pressing OK. Press OK again to return to the former screen.
- When you are recording a programme in the SP mode and the remaining tape becomes shorter than the recording time, the tape speed is automatically changed to the LP mode. Note that some interference will appear on the picture at the point the tape speed is changed. If you want to keep the same tape speed, set AUTO LONG PLAY to OFF in the TAPE OPTIONS menu (see page 67).

Note

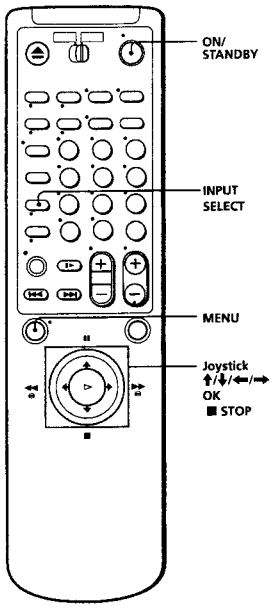
- If the VCR beeps repeatedly, this means that the programme's ShowView number is incorrect.

Setting the timer manually

If ShowView is not available in your area, follow the instructions below to set the timer to record programmes.

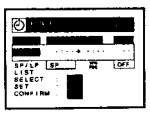
Before you start...

- Check that the VCR clock is set to the correct time.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- If you don't use the SMARTLINK connection, turn on your TV and set it to the video channel.



1 •MENU Press MENU.

Push the joystick to ↑/↓ to highlight TIMER, then press the joystick (OK).



2 Set the date, start and stop times, programme position, tape speed and the VPS/PDC function:

1 Push the joystick to → to highlight each item in turn.

2 Push the joystick to ↑/↓ to set each item.

To correct a setting, push the joystick to ← to reset.

- To record the same programme every day or the same day every week, see "Daily/weekly recording" on page 54.
- If you don't want to use the VPS/PDC function, see "Timer recording with VPS/PDC signals" on page 50.

INPUT SELECT

- To record from other sources connected to the LINE-1 (TV) or LINE-3 IN (Scart) connector, or LINE-2 IN jacks, press INPUT SELECT to display "L1," "L2," or "L3" in the "PROG" position.

3 Press OK to confirm the setting.

4 • ON/STANDBY Press ON/STANDBY to turn off the VCR.

The ⏲ indicator appears in the display window and the VCR stands by for recording.

To record from other sources, leave the connected equipment switched on.

To stop recording

To stop the VCR while recording, push the joystick to ↓ (■ STOP).

continued

Setting the timer manually (continued)

Daily/weekly recording

In step 2 above, push the joystick to ↓ to select the recording pattern. Each time you push the joystick to ↓, the indication changes as shown below. Push the joystick to ↑ to change the indication in reverse order.

TODAY → SUN-SAT (Sunday to Saturday) → MON-SAT (Monday to Saturday) → MON-FRI (Monday to Friday) → SAT (every Saturday) ..... → MON (every Monday) → SUN (every Sunday) → 1 month later →(dates count down) → TOMORROW →TODAY

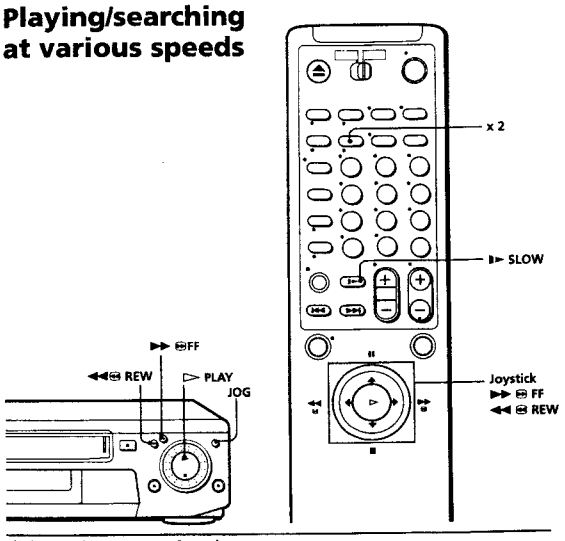
Tips

- To set the programme position, you can also use the PROG +/– or programme number buttons.
- To set the tape speed, you can also use SP/LP.
- In step 2 above, you can check the TIMER LIST by selecting LIST and pressing the joystick (OK). Press the joystick (OK) again to return to the former screen.
- When you are recording a programme in the SP mode and the remaining tape becomes shorter than the recording time, the tape speed is automatically changed to the LP mode. Note that some interference will appear on the picture at the point the tape speed is changed. If you want to keep the same tape speed, set AUTO LONG PLAY to OFF in the TAPE OPTIONS menu (see page 67).

Note

- The ⏲ indicator flashes in the display window when you press ON/STANDBY with no tape inserted.

Playing/searching at various speeds



Playback options	Operation
View the picture during fast-forward or rewind	During fast-forward, keep pushing the joystick to ►►⊖ FF. During rewind, keep pushing the joystick to ◄◄⊖ REW.
Play at high speed	• During playback, push the joystick to ►►⊖ FF or ◄◄⊖ REW. • During playback, keep pushing the joystick to ►►⊖ FF or ◄◄⊖ REW. When you release the joystick, resume normal playback.
Play at twice the normal speed	During playback, press x 2.
Play in slow motion	During playback, press ▮► SLOW.
Play frame by frame	During pause, push the joystick to ►►⊖ FF or ◄◄⊖ REW. Keep pushing the joystick to ►►⊖ FF or ◄◄⊖ REW to play one frame each second.
Rewind and start play	During stop, press ▷ PLAY on the VCR while holding ◄◄⊖ REW down on the VCR.

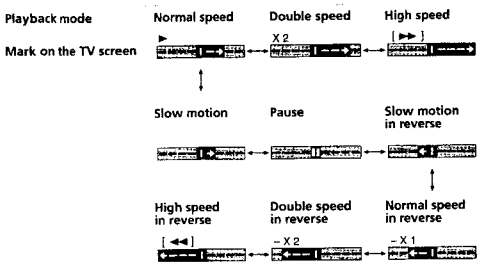
continued

Using the CLICK JOG SHUTTLE ring

With the CLICK JOG SHUTTLE ring, you can operate a variety of playback options.
There are two ways for using the CLICK JOG SHUTTLE ring, normal mode (CLICK JOG SHUTTLE ring) and jog mode (CLICK JOG ring) .

To use the CLICK JOG SHUTTLE ring in normal mode

During playback or pause, turn the CLICK JOG SHUTTLE ring clockwise or anticlockwise. Each change in the CLICK JOG SHUTTLE ring position changes the playback mode, and the corresponding mark appears on the TV screen for a few seconds in the following way if the on-screen display function is on:



To use the CLICK JOG SHUTTLE ring in jog mode

Use this mode for frame-by-frame playback.
Press JOG to enter the jog mode. The JOG indicator lights up. If you change to the jog mode during any playback mode, the playback pauses so you can see a still picture. Each change in the CLICK JOG ring position shifts the picture one frame. To shift frames in reverse, turn the CLICK JOG ring anticlockwise.
The frame shift speed depends on the speed you turn the CLICK JOG ring.
To resume normal mode, press JOG again. The JOG indicator goes off.

To resume normal playback

Press the joystick (▷ PLAY).

Tip

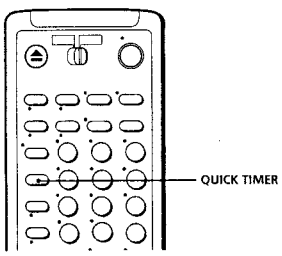
- Adjust the picture using TRACKING +/- if:
  - Streaks appear while playing in slow motion.
  - Bands appear at the top or bottom while pausing.
  - The picture shakes while pausing.

Notes

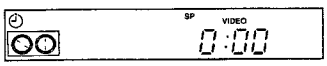
- The playback sound is muted during the operations in the above table.
- In the LP mode, noise may appear or there may be no colour.
- If the playback mode mark doesn't appear on the TV screen, press DISPLAY.

Recording TV programmes using the quick timer

After starting recording in the normal way, you can have the VCR stop recording automatically after a specified duration.



1 While recording, press QUICK TIMER once.
The ⏲ indicator appears in the display window.



2 Press QUICK TIMER repeatedly to set the duration.
Each press advances the time in increments of 30 minutes.

0:00 → 0:30 → 1:00 - - - - → 10:30 → 11:00

The duration decreases minute by minute to 0:00, then the VCR stops recording and turns off automatically.

To extend the duration

Press QUICK TIMER repeatedly to set to the new duration.

To stop recording

To stop the VCR while recording, push joystick ↓ (■ STOP).

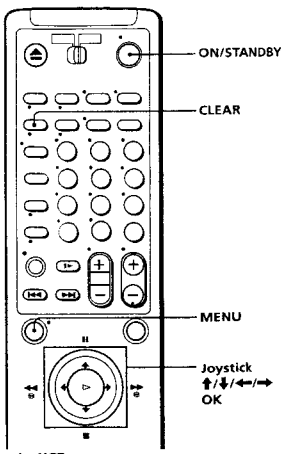
Using the quick timer during stop mode

1 Press QUICK TIMER.
2 Press PROG +/- or INPUT SELECT to select the programme position you want to record.
3 Press QUICK TIMER repeatedly to set the recording duration.
The recording starts.

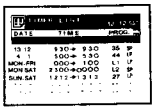
Checking/ changing/ cancelling timer settings

Before you start...

- Turn on your TV and set it to the video channel.



1 Press ON/STANDBY to turn on the VCR.
2 Press MENU, and highlight LIST, then select TIMER LIST and press the joystick (OK):



- If you want to change or cancel a setting, go on to the next step.
- If you do not need to change or cancel the settings, press MENU, then turn off the VCR to return to recording standby.

3 Push the joystick to ↑/↓ to select the setting you want to change or cancel,

- If you want to cancel the setting, press CLEAR and skip the next step. Press MENU to exit menu.
- If you want to change the setting, press OK.

continued

4 The selected item appears in the TIMER menu.

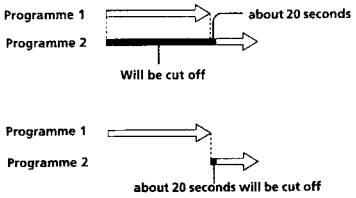
- To change the setting, push the joystick to ←/→ to highlight the item you want to change, and push the joystick to ↑/↓ to reset it. To cancel the VPS/PDC function, set VPS/PDC to OFF.

5 Press the joystick (OK) to set the timer.

If any settings remain, turn off the VCR to return to recording standby.

When the timer settings overlap

The programme that starts first has priority and the second programme starts recording only after the first programme has finished. If the programmes start at the same time, the programme listed first in the menu has priority.



Tip

- In step 5 above, you can check the TIMER LIST by selecting LISTS and pressing OK. Press MENU to exit the TIMER LIST.

Recording stereo and bilingual programmes

In ZWEITON (German stereo) system

This VCR automatically receives and records stereo and bilingual programmes based on the ZWEITON system. When a stereo or bilingual programme is received, the STEREO indicator appears in the display window.

To select bilingual sound while recording

Press AUDIO MONITOR to select the sound you want.

To listen to	On-screen display	Display window
Main	MAIN	STEREO
Sub	SUB	STEREO
Main and sub	MAIN/SUB	STEREO

Selecting the sound during playback

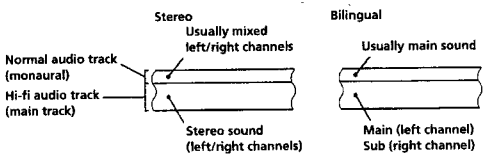
Press AUDIO MONITOR to select the sound you want.

To listen to	On-screen display	Display window
Stereo/main and sub (left and right channels)	STEREO	STEREO
Left channel/main	LCH	STEREO
Right channel/sub	RCH	STEREO
Standard sound	No indicator	No indicator

continued

How sound is recorded on a video tape

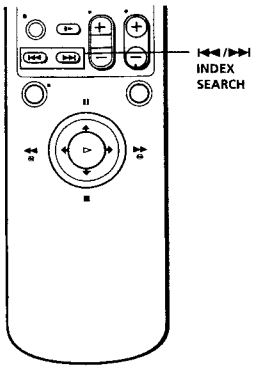
The VCR records sound onto two separate tracks. Hi-fi audio is recorded onto the main track along with the picture. Monaural sound is recorded onto the normal audio track along the edge of the tape.



Notes

- To listen to playback sounds in stereo, you must use the EURO-AV or AUDIO OUT connections.
- When you play a tape recorded in monaural, the sound is heard in monaural regardless of the AUDIO MONITOR setting.
- If the AUDIO MONITOR button does not function, check that AUDIO MIX in the AUDIO OPTIONS is set to OFF.

Searching using the index function

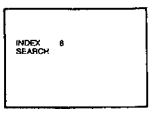


The VCR marks the tape with an index signal at the point where each recording begins. Use these signals as references to find a specific recording. The VCR can search up to 99 index signals ahead of or behind the current position.

1 Insert an indexed tape into the VCR.

2 Press I◄◄ / ►►I INDEX SEARCH repeatedly to specify how many index signals ahead or behind you want to search:

- To search ahead, press ►►I INDEX SEARCH.
- To search backwards, press I◄◄ INDEX SEARCH.



The VCR starts searching and the index number on the TV screen counts down to zero. Playback starts automatically from that point.

To stop searching

Push the joystick to ↓ (■ STOP).

Note

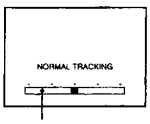
- No index signal will be added when recording starts from recording pause. However, an index signal will be marked if you change the programme position during recording pause.

Adjusting the picture

Adjusting the tracking

Although the VCR automatically adjusts the tracking when playing a tape (the tracking indicator ▩ flashes in the display window, then goes off), distortion may occur if the tape was recorded in poor condition. If so, manually adjust the tracking.

Press TRACKING +/– to display the tracking meter. The distortion should disappear as you press one of the two buttons (the ▩ indicator lights up). To resume automatic tracking adjustments, eject the tape and reinsert it or press TRACKING + and TRACKING – at the same time, so that the tracking meter comes back to the center.



Tracking meter

About Optimum Picture Control (OPC)

Optimum Picture Control (OPC) automatically improves recording and playback quality by adjusting the VCR to the condition of the video heads and tape. To maintain better picture quality, we recommend that you set OPC to ON in the VIDEO OPTIONS menu (with the OPC indicator in the display window lit). For details, see page 66.

OPC playback

The OPC function automatically works on all types of tapes, including rental tapes and tapes that were not recorded with OPC.

OPC recording

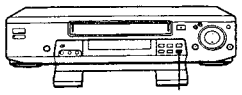
Whenever you insert a tape and start recording for the first time, the VCR adjusts to the tape using the OPC function (the OPC indicator flashes rapidly). This adjustment is retained until the tape is ejected.

To deactivate the OPC

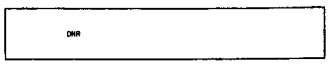
Press MENU and highlight OPTIONS, then VIDEO OPTIONS and set OPC to OFF. The OPC indicator in the display window goes off.

Digital Noise Reduction (DNR)

Digital Noise Reduction (DNR) automatically improves playback picture quality by the digital signal process. To obtain better picture quality, we recommend you to activate the DNR function by pressing the DNR button on the VCR (with the DNR indicator in the display window lit).



DNR

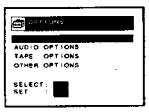


Notes

- You can adjust the tracking for the NTSC-recorded tape but the tracking meter won't be displayed.
- There is a delay of a few seconds before the VCR actually starts recording while the VCR analyses the tape. To avoid the delay, first set the VCR to recording pause (the OPC indicator flashes slowly) and press ● REC to have the VCR analyse the tape (the OPC indicator flashes rapidly). After the OPC indicator stops flashing, push ⏸ (II PAUSE) to start recording immediately. If you want to start recording quickly without using the OPC function, first set the VCR to recording pause (the OPC indicator flashes slowly) and push ⏸ (II PAUSE) to start recording.
- The DNR function does not work with MESECAM-recorded tapes.

Changing options

1 Press MENU, then select OPTIONS.



2 Push the joystick to ↑/↓ to highlight the kind of option to change, VIDEO OPTIONS, AUDIO OPTIONS, TAPE OPTIONS or OTHER OPTIONS then press the joystick (OK).

3 Push the joystick to ↑/↓ to select the option to change, then press the joystick (OK) to enter the pop up menu.

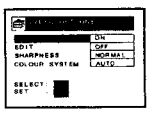
4 Push the joystick to ↑/↓ to select the desired setting, then press the joystick (OK) to confirm it.

5 Press MENU to exit the menu.

Menu choices

Initial settings are indicated in bold print.

VIDEO OPTIONS menu

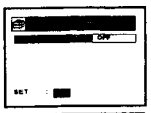


Menu option	Set this option to
OPC	• **ON** to switch on the OPC (Optimum Picture Control) function and improve picture quality. • OFF to switch off OPC. For details, see page 64.
EDIT	• ON to minimize picture deterioration when editing. • **OFF** to turn off EDIT. For details, see page 70.
SHARPNESS	• LOW to playback a poorly quality tape. • **NORMAL** to playback an average quality tape. • HIGH to playback a good quality tape.
COLOUR SYSTEM	• **AUTO** to detect automatically the colour system of a tape. • PAL to playback a tape recorded in the PAL system. • MESECAM to playback a tape recorded in the MESECAM system.

Note

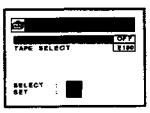
- When you playback with the EDIT function ON, the OPC and SHARPNESS functions don't work.

AUDIO OPTIONS menu



Menu option	Set this option to
AUDIO MIX	• ON to listen to the hi-fi and normal audio tracks at the same time. The AUDIO MONITOR button will not function. • **OFF** to listen to the hi-fi and normal audio tracks separately. Select the sound using the AUDIO MONITOR button. For details, see page 61.

TAPE OPTIONS menu

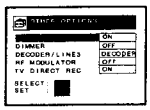


Menu option	Set this option to
AUTO LONG PLAY	• ON to automatically record from SP (Standard Play) to LP (Long Play)when the tape lenght is not long enough. • **OFF** to normally record in SP (Standard Play). For details, see page 54.
TAPE SELECT	• **E180** to use an E-180 or shorter tape type. • E195 to use an E-195. • E240 to use an E-240. • E300 to use an E-300. For details, see page 46.

continued

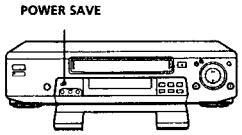
Changing options (continued)

OTHER OPTIONS menu



Menu option	Set this option to
BUZZER	• **ON** to output a beep sound when any illogical operation is made. • OFF to deactivate it.
DIMMER	• ON to make the display window dim. • **OFF** to make it brighter.
DECODER/LINE 3	• **DECODER** to use the LINE-3 IN connector as the Canal Plus decoder connector. • LINE3 to use the LINE-3 IN connector as the line input connector.
RF MODULATOR	• ON if you connect the VCR to your TV using only the aerial cable. • **OFF** if you connect the VCR to your TV using only the EURO-AV cable.
TV DIRECT REC	• **ON** to activate the TV DIRECT REC function. • OFF to deactivate it.

Saving the power consumption



The POWER SAVE switch has the function of activating (OFF) and/or deactivating (ON) the indicators in the display window while the VCR is standing by, to conserve the VCR power.

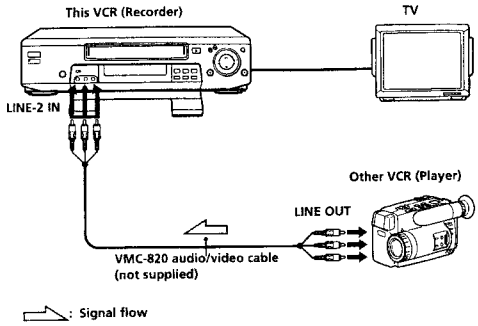
You can decrease the power consumption in standby mode to less than 4 W if you have set DECODER /LINE 3 to LINE 3 in OTHER OPTIONS menu (see page 38). If so, you will not be able to watch PAY-TV/C+ on your TV when VCR is in standby mode.

Note

- When you set a timer recording, the indicators in the display window are on even though POWER SAVE is set to ON.

Connecting to a VCR or stereo system

How to connect to record on this VCR



Tip

- You can also use the LINE-1 (TV) or LINE-3 IN connector instead.

Notes

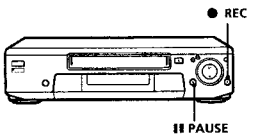
- Make sure you connect the plugs to jacks of the same colour.
- If the other VCR is a monaural type, leave the red plugs unconnected.
- If you connect this VCR to both the LINE IN and LINE OUT jacks of the other VCR, select the input correctly to prevent a humming noise.

How to connect to a stereo system

Connect the LINE-2 IN AUDIO L/R jacks on this VCR to the audio output jacks on the stereo system, using the RK-C510KS audio cable (not supplied).

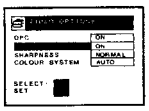
Basic editing

(when recording on this VCR)



Before you start editing

- Turn on your TV and set it to the video channel.
- Press INPUT SELECT to display "L2" (or "L3") in the display window.
- Press SP/LP to select the tape speed, SP or LP.
- On this VCR, set EDIT to ON in VIDEO OPTIONS menu to display "EDIT" in the display window. If the other VCR has a similar feature, activate this one as well.



1 Insert a source tape with its safety tab removed into the other (playback) VCR. Search for the point to start playback and set it to playback pause.

2 Insert a tape with its safety tab in place into this (recording) VCR. Search for the point to start recording and press II PAUSE.

3 Press ● REC on this VCR to set it to recording pause.

4 To start editing, press the II PAUSE buttons on both VCRs at the same time.

To stop editing

Press the ■ STOP buttons on both VCRs.

Tip

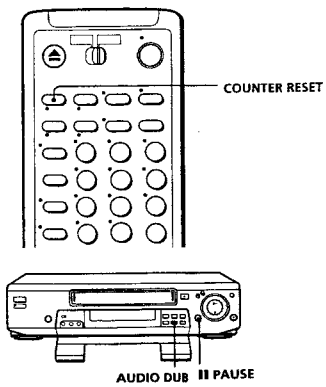
- To cut out unwanted scenes while editing, press II PAUSE on this VCR when an unwanted scene begins. When it ends, press II PAUSE again to resume recording (Assemble Editing).

Note

- If you start editing following the procedure above, the VCR won't start recording with the OPC function. To record a tape with the OPC function, press ● REC again during recording pause in step 3 so the VCR analyses the tape. Then, when you start editing in step 4, press II PAUSE after the OPC indicator stops flashing. If you press II PAUSE before the OPC indicator stops flashing, the OPC function is cancelled.

Audio dubbing

This feature lets you record over the normal audio track. The monaural sound previously recorded is replaced while the original hi-fi sound remains unchanged. Use this feature to add commentary to a tape that you have recorded with a camcorder.



Before you start dubbing

- Turn on your TV and set it to the video channel.
- Press INPUT SELECT to display "L2" or "L3" in the display window.

1 Insert a source tape into the stereo system (or the playback VCR). Search for the point to start playback and set it to playback pause.

2 Insert a prerecorded tape with its safety tab in place into this (recording) VCR. Search for the end of the section to be replaced and press II PAUSE.

3 Press COUNTER RESET on this VCR to reset the counter to "0H00M00S."

4 Rewind the prerecorded tape to the beginning of the section to be replaced.

The VCR enters pause mode.

5 Press AUDIO DUB.

The audio dubbing indicator ⊖ appears in the display window.

6 To start editing, press the II PAUSE buttons on this VCR and the stereo system (or other VCR) at the same time.

When the counter reaches "0H00M00S," audio dubbing stops automatically.

To stop while editing

Press the ■ STOP buttons on this VCR and the stereo system (or other VCR).

continued

Note

- After you use this feature, the audio in playback mode is automatically set to monaural.

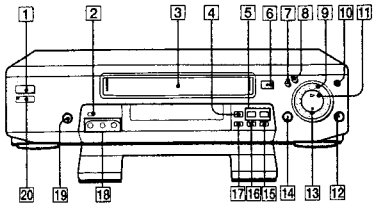
To listen to both the hi-fi and normal audio

Set AUDIO MIX to ON in the AUDIO OPTIONS menu (page 67). Use this feature to listen to dubbed audio over the original hi-fi audio. When AUDIO MIX is set to ON, the AUDIO MONITOR button does not function. Remember to reset AUDIO MIX to OFF after playing the tape.

Index to parts and controls

Refer to the pages indicated in parentheses ( ) for details.

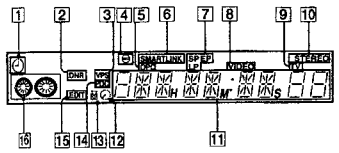
Front panel



1. ON/STANDBY switch/indicator (14)
2. POWER SAVE switch (68)
3. Tape compartment
4. AUTO SET UP/RF CHANNEL button (16)
5. PROGRAM -/+ buttons TRACKING (17, 64)
6. ⏏ EJECT button (42)
7. ◀◀ REW button (42, 55)
8. ▶▶ FF button (42, 55)
9. CLICK JOG SHUTTLE ring (56)
10. JOG indicator (55)
11. ▷ PLAY button (42, 55)
12. ● REC button (45,70)
13. ■ STOP button (44, 70)
14. ❚❚ PAUSE button (70)
15. DNR button (65)
16. AUDIO DUB button (71)
17. QUICK TIMER button (58)
18. LINE-2 IN VIDEO/AUDIO L/R jacks (69)
19. OPEN button (14)
20. Remote sensor (5)

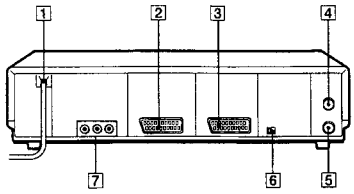
continued

Display window



1. TIMER indicator (49)
2. DNR indicator (65)
3. VPS indicator (50)
4. ⊖ (audio dubbing) indicator (71)
5. OPC indicator (64)
6. SMARTLINK indicator (11)
7. Tape speed indicators (45)
8. VIDEO indicator (45)
9. TV indicator (47)
10. STEREO indicator (61)
11. Line/programme position indicator/time counter/clock (14, 42, 45)
12. ◷ (remaining time) indicator (45)
13. ⊠ (tracking) indicator (64)
14. PDC indicator (50)
15. EDIT indicator (70)
16. Tape/Recording indicator (45)

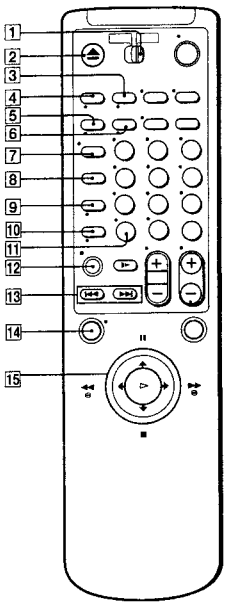
Rear panel



1. Mains lead (9, 12)
2. ⇨ LINE-1 (TV)
   ⇨ LIGNE-1 connector (9, 35, 37)
3. ⇦ LINE-3 IN
   ⇦ ENTREE LIGNE-3 connector (35)
4. AERIAL OUT
   ANTENNE SORTIE connector (9, 12)
5. AERIAL IN
   ANTENNE ENTREE connector (9, 12)
6. NTSC PB switch (41)
7. LINE-2 OUT AUDIO R/L/VIDEO jacks (13)

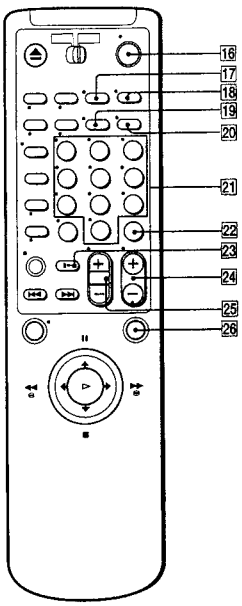
continued

Remote commander



1 TV/VIDEO remote control switch (5)
2 ⏏ EJECT button (41)
3 COUNTER/REMAIN button* (44)
4 COUNTER RESET button* (41, 71)
5 CLEAR button* (31, 49, 59)
6 x 2 button* (55)
7 DISPLAY button (6, 44)
8 QUICK TIMER button* (58)
9 INPUT SELECT button (44, 52)
TV power on/TV mode select button *(for TV)* (6)
10 SP/LP button (45)
(Teletext) button *(for TV)* (6)
11 -/-- (ten's digit) button (46)
12 ● REC button (44)
13 ⏮/⏭ INDEX SEARCH buttons (63)
14 MENU button
15 Joystick
↑/↓/←/→
⏸ PAUSE /■ STOP
◀◀ REW (rewind)
▶▶ FF (fast-forward)
▷ PLAY / OK

* FASTEXT buttons *(for TV)*



16 ON/STANDBY button (6)
17 WIDE button *(for TV)* (6)
18 AUDIO MONITOR button (6, 61)
19 TV/VIDEO button (46)
20 SHOWVIEW button (48)
21 Programme number buttons (6)
22 SET button (48)
23 ▮► SLOW button (55)
24 PROG (programme) +/– buttons (6, 24, 45)
/ Teletext page access buttons *(for TV)* (6)
25 VOL (volume) +/– buttons *(for TV)* (6)
26 REPLAY button (41)